

Application Serial No. 09/978,523
Date June 8, 2004
Reply to Office Action dated March 8, 2004

REMARKS

Upon submission of this amendment claims 1 through 10 and 24 are pending in the application. Reconsideration of the application as submitted is respectfully requested.

As requested by the Examiner in the Office Action mailed March 8, 2004, under 35 U.S.C. § 121, Applicant affirms the election of the species disclosed in claims 1 through 10 and 24.

The specification is objected to because of various informalities. It is respectfully submitted that the informalities have been corrected according to the Examiner's recommendations.

Claims 1 through 3, 6 through 8, and 24 are rejected under 35 U.S.C. § 102(e) as being anticipated by Eklund, U.S. Patent No. 6,392,584. It is respectfully submitted that Eklund does not teach an apparatus and method for the pre-assembly evaluation of motors in sub-assemblies before they are place into service nor does Eklund provide a transducer adapted to be disposed in "exclusive energy transfer relation" with a motor housing in said test location, as set forth in claims 1, 6 and 24.

Eklund teaches a system and method for detecting and warning of potential failure of rotating and vibrating machines only after they are placed in service. Vibration and/or rotation of a machine are sensed by a specially designed monitor in Eklund. The monitor includes a circuit board wherein an accelerometer, an auto range circuit, an analog to digital converter and a processor are mounted.

The Eklund monitor is stationed on top of a machine, the accelerometer mounted on the circuit board generates an output signal (data) corresponding to motions of the measured machine at a monitoring point. The output signal (data) is transmitted to an auto range circuit where the signal (data) is

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scaled. Once the signal (data) is scaled, it is transferred to an analog-to-digital converter, subsequently, the signal (data) is transferred to a processor. Once the signal (data) is transmitted to the processor, a statistical parameter is calculated for each data set. If the parameter meets or exceeds a predetermined alarm threshold, the processor generates an alarm signal. The preferred parameter is kurtosis, which is the fourth moment of the digitized input signal. The transducer used in Eklund is preferably, a two-axis accelerometer, this allows the system to be substantially independent of the mounting orientation of the transducer on the machine.

Applicant's invention contemplates "pre-assembly" testing of motors "in a test location;" whereas Eklund is post assembly monitoring in a service location. The terms "pre-assembly" and "test location" used in the claims presented herein signify testing of a motor, although it may be in a sub-assembly of window regulator components in a special test location before it goes into final assembly in an automobile door or body. This clearly distinguishes from Eklund and renders the 102 rejection invalid.

Further, Eklund's accelerometer is on a circuit board that includes autorange circuitry, an analog to digital convertor, a sample control mechanism for controlling the speed of the analog to digital convertor and a processor, all the components are connected and assembled into a monitor. The monitor is placed on top of a machine, subsequently, the machine vibrations are measured. The accelerometer via the monitor, is located preferably on the machine housing where the machine vibration is measured. Alternatively, the accelerometer via the monitor, is located on an externally stationed motor that is mechanically linked to the components of the machine, wherein the motor is the driving force for the machine. Whether the motor is enclosed in the machine housing or stationed externally of the machine and mechanically linked to be the driving force of the machine, the accelerometer is not in exclusive energy transfer relation with the

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motor housing as set forth in claims 1, 6 and 24 because the Eklund motor is always linked to other components. The mechanically and electrically linked components in Eklund exert electromagnetic interference on the measured machine vibration. In comparison, Applicant's invention as set forth in claims 1, 6 and 24 does not incur the electromagnetic interference problem and the true motor vibration measurement is acquired because Applicant's accelerometer is in exclusive transfer relationship with the motor housing.

According to the foregoing reasons, it is submitted that claim 1 from which claims 2-3 depend, claim 6 from which claims 7-8 depend and claim 24 are not anticipated and patentably define over Eklund.

Claims 4 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Eklund, U.S. Patent No. 6,392,584 in view of Thomsen, U.S. Patent No. 6,639,411. The Examiner acknowledges that "Eklund does not teach a transport mechanism including a clamp for positioning the piezoelectric pickup proximal to the motor housing and releasing the pickup when in contact with the motor housing. Thomsen teaches a transport mechanism including a clamp for positioning the piezoelectric pickup proximal a motor housing and releasing the pickup when in contact with the motor housing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Eklund to include the teachings of Thomsen because clamping and releasing the transducer would have allowed the skilled artisan to detect motor structure damage."

It is respectfully submitted that it would not have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Eklund apparatus to include the Thomsen transport mechanism. The Examiner has not established a *prima facie* case of obviousness. The combined assembly would still be in a service situation, not a pre-assembly test location. Reconsideration is requested.

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According to the foregoing reasons, it is submitted that claims 4 and 9 are non-obvious and patentably define over Eklund in view of Thomsen.

Claims 5 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Eklund, U.S. Patent No. 6,392,584 in view of Wang, U.S. Patent No. 4,715,706. The Examiner acknowledges that "Eklund does not teach a transducer comprising a laser disposed proximal to test location and having an output being adapted to be aimed at a motor housing in a location, the processor comprising means for deriving Doppler shift related frequency components from said signal quantities as a result of periodic movement of the motor housing toward and away from the laser." Yet, the Examiner proceeds to assert "it would have been obvious to one of ordinary skill in the art at the time the invention was made, in view of Wang, to modify the apparatus of Eklund to include the Wang transducer comprising a laser."

It is respectfully submitted that it would not have been obvious to one of ordinary skill in the art at the time the invention was made, to modify the Eklund apparatus to include the Wang transducer comprising a laser. The Examiner has not established a *prima facie* case of obviousness. Hind sight cannot be used to combine cited references in order to produce an invention. The Examiner has failed to provide any suggestion as to how to combine the Eklund apparatus with the Wang transducer comprising a laser. Furthermore, there is no suggestion in the cited references to test motors in a pre-assembly test location. Eklund merely monitors motors in service and can not provide the advantages of the present invention.

According to the foregoing reasons, it is submitted claims 5 and 10 are non-obvious and patentably define over Eklund in view of Wang.

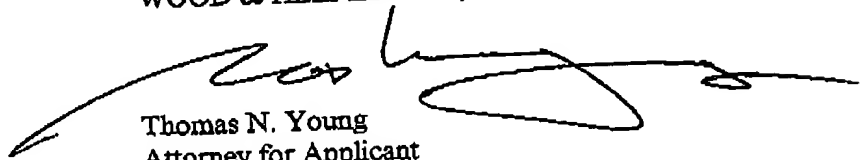
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If the Examiner feels that prosecution of the present application can be expedited by way of an Examiner's Amendment, the Examiner is requested to contact the Applicant's attorney at the telephone number listed below.

Respectfully submitted,

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